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REPORT

VISUAL RECONNAISSANCE

IN

I CORPS

30 SEPTEMBER 1968

HQ PACAF

Directorate, Tactical Evaluation
CHECO Division

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Prepared by:

C. WILLIAM THORNDAL

Project CHECO 7th AF, DOAC

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REPLY TO: DOTEC
ATTN OF:

30 September 1968


SUBJECT: Project CHECO Report, "Visual Reconnaissance in I Corps" (U)

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FOR THE COMMANDER IN CHIEF


WARREN H. PETERSON, Colonel, USAF
Chief, CHECO Division
Directorate, Tactical Evaluation
DCS/Operations

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FOREWORD

This report examines the MACV Visual Aerial Surveillance Program in I Corps, emphasizing the areas of responsibility for the Air Force O-1 and O-2 aircraft, Army O-1s, and the Senior Corps Advisor, as well as support given the Marines. That Air Force Visual Reconnaissance was an invaluable part of the I Corps reconnaissance program is self-evident.

Two major theses are discussed: First the Visual Reconnaissance (VR) program in I Corps was user-oriented. The MACV VR program in I Corps relied upon only O-1 and O-2 aircraft assigned to one tactical air support squadron and two reconnaissance airplane companies. The program, however, was implemented, not through these three aircraft units, but through the many Army, Marine, and ARVN ground units. No designated "VR Program" existed independently of the VR and FAC missions flown in support of U.S. and ARVN division users. Accordingly, the patterns of coverage adhered to those of unit areas of operation, and each user determined the nature of his VR program. Although Air Force FAC resources were dedicated to the FAC mission and only secondarily to the VR mission, they were used to accomplish significant Visual Reconnaissance. Since the O-1 and O-2 aircraft had other higher priority missions, no single manager of VR scheduling existed in I Corps.

Second, the Visual Reconnaissance program in I Corps was scattered among a number of users, but no organization existed to analyze VR as a total, unified effort. Seventh Air Force and the I Corps Senior Advisor had

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collection systems to systematically compile data produced by VR flights, but no one made a thorough analysis of Visual Reconnaissance techniques and their effectiveness. This report provides comments on the completeness of VR coverage in I Corps.

For the purpose of this report, the Visual Reconnaissance was an invaluable

source of information on the activities of the enemy in the area of I Corps.

The Visual Reconnaissance program was initiated in the Visual Reconnaissance (VR)

program in I Corps in 1964. The program was initiated by the I Corps Staff

and was designed to provide a systematic method of collecting and analyzing

Visual Reconnaissance data. The program, however, was not

designed to provide a systematic method of collecting and analyzing

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VISUAL RECONNAISSANCE IN I CORPS

Air superiority in I Corps created a permissive environment for Visual Reconnaissance (VR) by O-1 and O-2 aircraft. Those essentially unarmed observation aircraft daily covered all five provinces, while performing several missions. In addition to flying Visual Reconnaissance missions, the pilots executed VR while providing convoy cover, adjusting artillery and naval gunfire, and directing airstrikes.

No other technique could replace VR in an environment such as Vietnam. Not only did the pilot fly the mission and find the enemy, but he drew on his familiarity with the area to classify the routine and the abnormal. He could call in tac air and direct it on fleeting targets and at the end of a two-hour flight, he reduced the mission results to a synthesis of highlights which others could assimilate at a glance. In a sense, the VR pilot was an intelligence officer who generated and attacked his own targets; he was a photo interpreter without the need for film; he was a storage bank of previous intelligence data automatically applied to the immediate situation. Any VR pilot would be the first to say that the other intelligence sources--the long range reconnaissance teams, the indigenous agents, and the photo recce aircraft--were just as indispensable in their specialties. Actually, the FAC was apt to regret the dearth of feedback from these other sources, since he wanted to know everything relevant to his VR area. The most telling feedback was the number of preplanned sorties on VR-sighted targets of the preceding few days. The VR pilot knew, as did his users, that nothing replaced the airborne human eye for keeping watch over I Corps. In the first six months

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of 1968, the Air Force FACs had 1,020 reported VR sightings. ^{1/}

Since the primary tools for performing Visual Reconnaissance were an aircraft and an observer, many units had a VR capability. Every day a fleet of Air Force O-2s, Army O-1s, Marine OV-10s, and helicopters of all services swarmed over the hills and valley looking for the enemy. Anyone regularly flying over I Corps became acquainted with certain areas and spotted the unusual. Some units and some aircraft had VR as the primary job; others conducted a large percentage of VR while on standby for their primary duties; others rarely generated VR intelligence, but they looked just the same. As a result, the VR program in I Corps was a mosaic of programs, units, responsibilities, and reporting procedures. Some pieces fit together, some overlapped, and some left holes (though not often and then mainly due to weather).

Although a single manager did not schedule a specific and defined VR program anywhere in I Corps, what might have seemed an uncoordinated effort with potential loopholes was assimilated by an effective and methodical debriefing system collecting VR intelligence at I Corps Marine and ARVN Headquarters. Under the circumstances, VR was a user-oriented service and users knew best what they wanted. So long as all of I Corps was the responsibility of some user, and that user had adequate resources, the VR responsibilities were realized. To understand the program in I Corps, it is necessary, however, to comprehend the MACV program and the resources supporting it.

To insure complete and systematic Visual Reconnaissance of all South Vietnam by American aircraft, MACV levied on Seventh Air Force, the U.S. Army,

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Vietnam, and Corps Senior Advisors the requirement for a Visual Aerial Surveillance program. Guidelines were published in MACV Directive 381-1, "Military Intelligence: Visual Aerial Surveillance", dated 10 August 1966. Implementation of the comprehensive VR program required integration of diverse assets, some dedicated to accomplishing reconnaissance, and others to conducting surveillance in conjunction with such primary functions as artillery adjustment and control of tac air.

Seventh Air Force and the U.S. Army, Vietnam, were to deploy aircraft and crews in to I Corps and "monitor the visual surveillance program for compliance with this directive and recommend changes for the improvement of the program's effectiveness and efficiency". Two Army O-1 companies were under operational control (OPCON) of the Corps Senior Advisor, who was also the Commanding General, III Marine Amphibious Force (III MAF). The Air Force aircraft were to be "responsive to the sector aerial surveillance officer" through coordination with the senior ALO, but operational control of the aircraft and FACs remained with Seventh Air Force. (See Appendix I for their deployment.)

Responsibility for complete VR coverage of I Corps rested with the Senior Corps Advisor. According to the MACV directive, ^{2/} he would:

"Develop in coordination with senior ALO, ARVN and O-1 company commanders detailed surveillance plans to implement this program within his corps area."

He reported to MACV on all VR areas not covered and the reason for the lack of coverage. Yet, he did not have operational control of the Air Force O-1/

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0-2 resources--perhaps half of his potential VR assets. He could not direct Air Force FACs to cover particular areas and had to use his Army 0-1 resources to fill any potential gaps. As will be discussed later, this procedure generally provided adequate coverage, though occasional lapses occurred, as happened around Khe Sanh prior to its siege in early 1968.

To facilitate the collection of data on VR sightings discovered in I Corps, a timely reporting system was established. Air Force 0-1/0-2 debriefings were directed to the appropriate Direct Air Support Center (DASC): either DASC Victor for the 1st and 101st Cavalry Divisions in XXIV Corps, or Horn DASC for the Americal Division, and all I Corps FACs assigned to ARVN units. Army debriefings were assigned to the Visual Aerial Surveillance Center (VASC) maintained by American advisors in the I Corps ARVN Headquarters.

In August 1968, Provisional Corps, Vietnam, had been redesignated XXIV Corps and the I Corps Free World Forces DASC at I DASC was moved into III MAF Headquarters under the name Horn DASC. The I Corps ARVN DASC remained I DASC.

MACV Directive 381-1 required three visual surveillance reports to insure timely and comprehensive dissemination of intelligence gathered. For significant enemy activity of immediate tactical value, the immediate spot report generally went to the province, division, or corps level for transmittal to the MACV Combat Operation Center. Routine debrief information was directed into the daily aerial observation report, giving complete and specific mission results. The VASC consolidated the Army 0-1 missions into the Aerial Observation Report; the DASCs summarized the Air Force mission results in the DASC

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Daily Intelligence Summary (DISUM). The DASCs and VASC also submitted summaries of weekly statistics.

While the Corps Senior Advisor and the Air Force (through the DASCs) collected the daily intelligence data and exercised control over the VR aircraft, they generally did not direct where the VR flights would fly. This was done by the I Corps users, whose needs were varied. Although the Air Force in I Corps was more a provider of VR than a user, it did benefit directly from the generation of lucrative targets, especially for its interdiction efforts in the western mountains and as a source for potential photo recce targets. More importantly, VR, as a function secondary to control of tac air, was a "bonus" use of the FACs when there was no air to control. VR kept the pilots familiar with their user's areas of operation (AOs) and better able to direct airstrikes. Yet, basically, VR was flown to satisfy a user who kept careful watch over his designated AO. In I Corps, the ARVN, the Army, and the Marines had AOs. A small Republic of Korea unit had the adequate organic resources to accomplish reconnaissance of its small AO in Quang Nam Province.

ARVN VR

As the National Army of the Republic of Vietnam (ARVN), they had all of I Corps within their area of responsibility; however, the ARVN forces were deployed principally around the major cities and towns on the coastal plain. The 1st ARVN Division at Hue Citadel, the 51st ARVN Regiment at Hoi An, and the 2d ARVN Division at Quang Ngai were the main ARVN units, which in I Corps were outnumbered by U.S. forces four to one. Thus, VR over the

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cities would be primarily generated by the VR assets dedicated to the ARVN: the limited VNAF resources and the Air Force 0-1/0-2 aircraft assigned to the ARVN provincial (or sector) headquarters.

The ARVN also had responsibility for the western mountains beyond the boundaries of the U.S. AOs. One continuous tier of U.S. AOs spanned I Corps from the DMZ in the north to II Corps in the south, but not all of them ran to the Laotian Border. The area west of the AOs was therefore an ARVN responsibility, unless other provisions were made, such as when the A Shau Valley temporarily fell within the 1st Cavalry Division's AO during Operation DELAWARE. The ARVN rarely operated in the isolated western mountains except in conjunction with U.S. units, as happened during DELAWARE. Since the ARVN seldom saw the western areas, the region was of primary interest to the Army long range reconnaissance patrols and FAC/VR pilots.

Each provincial American Advisory Team contained its Air Force component--the Tactical Air Control Party (TACP)--with its ALO, FACs, radio technicians, and aircraft maintenance men. Some airstrips were either unable to receive the 0-2 safely or were insecure at night. The latter was a real threat. During the Tet Offensive, the Thua Thien Sector lost eight aircraft when the enemy overran the Citadel. Splitting the TACP away from the FACs was undesirable. With the Quang Nam TACP at Hoi An and the FACs at Da Nang, the sector ALO had to divide his time between the two sites. At Tam Ky, the sector FACs rotated between the TACP and the aircraft beddown at Chu Lai. Since the collocation of FACs with the user's headquarters was ideal in keeping abreast of unit activities, the rotation between Chu Lai and Tam Ky put the FACs in

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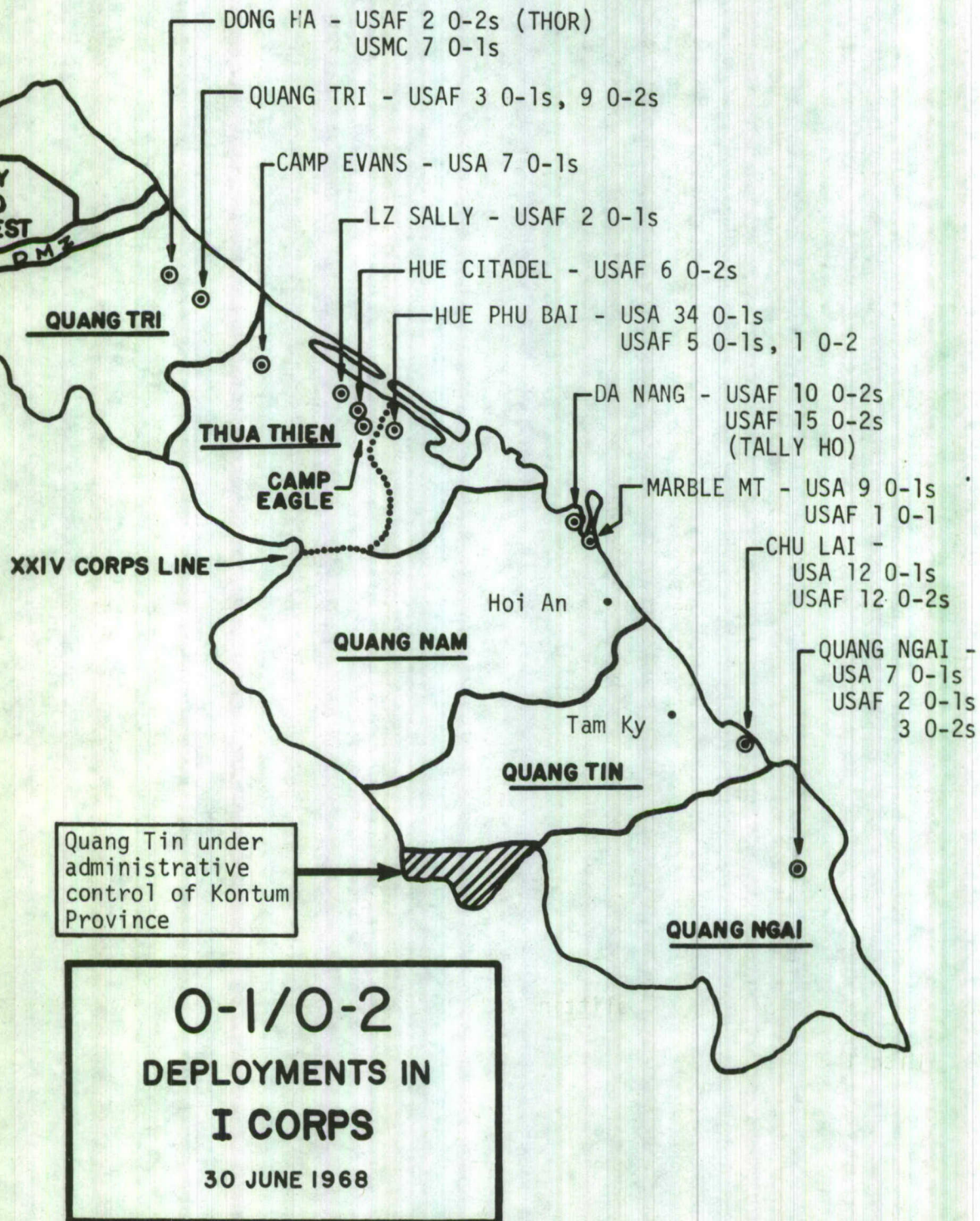


FIGURE 1

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sector headquarters at least part of the time.

As of 30 June 1968, the sector resources totaled the following, with ARVN division ALOs included in the FAC totals for Thua Thien and Quang Ngai (Fig. 1.): ^{3/}

Quang Tri Sector: TACP, 2 O-1s, 2 FACs (Quang Tri La Vang)

Thua Thien Sector: TACP, 6 O-2s, 7 FACs (Hue Citadel)

Quang Nam Sector: TACP, (Hoi An); 4 O-2s, 10 FACs (Da Nang)

Quang Tin Sector: TACP (Tam Ky); 3 O-2s, 5 FACs (Chu Lai)

Quang Ngai Sector: TACP, 1 O-1, 3 O-2s, 5 FACs (Quang Ngai)

The Sector ALO had the responsibility for scheduling his aircraft in support of the ARVN. The ALO attended the daily advisor briefings to learn which areas would require special attention and FAC services. Flights were scheduled around tac air preplans fragged by 7AF (usually in the mountain interdiction campaign) and around ARVN operations.

Requirements by the ARVN for FAC services varied between the provinces and with the combat situations. For instance, in Thua Thien Sector, from April to June 1968, the ARVN required few FAC missions: ^{4/}

"During this period FAC work with ARVN units was practically non-existent. Productive work within the geographic boundaries of Thua Thien Sector included:

Work with the Special Air Warfare Forces;

Interdiction of Highways 547, 547A, and 548;

Preparation of A Shau Valley for invasion by ground units."

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The existence of the 1st Cavalry and 101st Airborne Division AOs in eastern Thua Thien also relieved the sector FACs of concentrated efforts there. In such circumstances, the sector FACs devoted much of their flying time to VR in western Thua Thien--the A Shau Valley.

The Quang Tri Sector FACs had considerably fewer resources than did the Thua Thien FACs. In a monthly activities report, the ALO sketched the situation: 5/

"At the present time (1 August 1968) Quang Tri has one ALO, two FACs and two aircraft assigned. Our primary mission is to support the 1st and 2nd ARVN Regiments, the Quang Tri Province and Regional Forces, and to conduct VR of the area. When both Regiments are conducting operations at the same time it is impossible to give continuous air cover. At the same time we are unable to support any operation the Sector might be conducting or to maintain a daily VR schedule."

Generally, ARVN operations did not occur so often that the VR program suffered, and therefore western I Corps received aerial reconnaissance. Complicating the situation were vast tropical jungles and mountainous terrain that obscured so much from the FAC's eyes. Just as the jungle limited VR, so it hampered the enemy ground movements, forcing him to follow the trails, build roads, and cross at fords. 6/ By devoting resources to the roads and trails, the sector FACs conducted a concentrated VR program in I Corps.

U.S. Army VR

Visual Reconnaissance resources for the U.S. Army divisions in I Corps included the Air Force O-1s/O-2s, the Army O-1s, and OV-1C Mohawks, plus hundreds of helicopters. These extensive resources gave the division AOs

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O-1 over Rural Area
Figure 2

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probably the most intensive VR coverage in I Corps, especially in the AOs of the 1st and 101st Cavalry Divisions (Airmobile) with their vast number of helicopters. These helicopters provided significant intelligence. For instance, it was the 1/9th Cavalry Squadron, 1st Cavalry Division, that provided VR of the A Shau Valley preparatory to the air assault in Operation DELAWARE. However, the more formal concept of MACV's VR program concerned only the fixed-wing observation aircraft.

Unlike the ARVN, the Army division made heavy and constant use of its Air Force FACs for their primary function of controlling tac air. While controlling tac air, however, the FACs flew considerable VR in the AOs in eastern I Corps. By 30 June 1968, division resources were as follows: 7/

- 1st Cavalry Division (Southern Quang Tri and Northern Thua Thien) Div Hq, 3d Bde, 1/9th Cav Sq: 3 TACPs (Camp Evans) 1 O-1, 9 O-2s, 16 FACs (Quang Tri North)
1st Bde: TACP (LZ Betty), acft at Quang Tri North
2d Bde: TACP (LZ Jane), acft at Quang Tri North
- 101st Airborne Division (Southern Thua Thien)
Div Hq, 1st Bde: 2 TACPs (Camp Eagle); 5 O-1s, 7 FACs (Phu Bai)
2d Bde: TACP, 2 O-1s, 3 FACs (LZ Sally)
3d Bde/82d Abn Div: (OPCON to 101st Abn Div):
TACP (Camp Rodriguez); 3 O-2s, 10 FACs (Da Nang)
- Americal Division (Quang Tin and Quang Ngai)
Div Hq, 198th Bde: 2 TACPs, 9 O-2s, 17 FACs (Chu Lai)
196th Bde: TACP (LZ Baldy), acft at Chu Lai
11th Bde: TACP (Duc Pho), acft at Chu Lai
1/1st Armored Cav: no TACP, 2 FACs pooled with 196th Bde

Collocation of FACs with Army divisions and brigades was especially

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desirable for the VR program, because the VR sightings provided a prime source of intelligence for airstrikes within the unit AOs. Of the nine Army brigades in I Corps, the FACs and aircraft were physically located at three brigade headquarters and able to fly or drive to four more. The most significant separation was with the 1st Cavalry Division, where the FACs were at Quang Tri North and unable to fly into Camp Evans--the division and 3d Brigade Headquarters--40 kilometers away. This hardship was partly ameliorated for the division, because the 1st Cavalry relied heavily on helicopter reconnaissance and the seven Army O-1s organic to its artillery unit.

The brigade ALOs scheduled their VR mission based on a knowledge of preplanned missions fragged by 7AF and on the desires of the Army unit commander. The TACPs were usually located with the brigade's intelligence G-2 Air Section and were up to date on events developing. In short, the Air Force VR was done when and where the user wanted it.

The Army also had two O-1 Reconnaissance Aircraft Companies (RACs) in I Corps, with headquarters located at Chu Lai and Hue Citadel. These were dedicated to flying reconnaissance under OPCON to the I Corps Senior Advisor, who was also the Commanding General, III MAF. As of 30 June 1968, the number of O-1s in the two companies totaled: ^{8/}

220th Reconnaissance Aircraft Company (Phu Bai)
1st and 2d Plats: 34 O-1s (Phu Bai)
3d Plat: 9 O-1s (Marble Mt.); (1st Plat, 21st RAC)

21st Reconnaissance Aircraft Company (Chu Lai)
1st Plat: included in total for 3d Plat, 220th RAC
(Marble Mt.)
2d Plat: 12 O-1s (Chu Lai)
3d Plat: 7 O-1s (Quang Ngai)

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Unlike Air Force aircraft, the Army O-1s were not dedicated to particular units (with one exception), but were placed in three pools to service the U.S. and ARVN units in the 1st and 2d ARVN and Quang Nam areas. As the aircraft most specifically dedicated to VR in I Corps, the Army O-1s and their relationship to the VR program deserve examination.

There were two platoons at Phu Bai, two at Marble Mountain near Da Nang, one at Chu Lai, and one at Quang Ngai. Only at Quang Ngai and Chu Lai did the aircraft deploy at the headquarters they served. However, the Army, much more than the Air Force, carried observers from the user units, whether ARVN, Marine, or Military Intelligence Battalion Aerial Reconnaissance Support, (MIBARS), and the O-1s flew into other fields to pick up such observers. At Phu Bai, the aircraft were at the secure airstrip rather than at 1st ARVN Division Headquarters in the Citadel, where the Army also lost six aircraft during Tet. One platoon flew mainly for the 3d Marine Division at Dong Ha, which was not secure from enemy artillery. At night, all the platoon's O-1s were located at Phu Bai, except one aircraft which flew the dusk mission, stayed overnight at Dong Ha, and then was used to fly the next morning's first-light mission before returning to Phu Bai. The O-1s out of Quang Ngai frequently flew to Tam Ky and those out of Marble Mountain went to Hoi An.

Schedulers of the Army O-1s had to observe a "two-aircraft line" that ran through I Corps parallel to the coast. For any mission beyond the coastal VR areas, the O-1s had to fly in pairs as a safety measure. This was similar to the Air Force policy, which required O-2s to fly in pairs in the TALLY HO WEST area north of the DMZ in North Vietnam. Scheduling of the Army O-1

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flights was done through the VASC system peculiar to I Corps.

The American Advisory Teams under the command of the I Corps Senior Advisor also recognized the basic ARVN apportionment of I Corps into three areas with two platoons of Army O-1s deployed to each area. The Corps Senior Advisor delegated control of the O-1s to the G-2 Senior Intelligence Advisor. The latter exercised his authority through the Visual Aerial Surveillance Center (VASC), of which he was director. To monitor the I Corps VR program and facilitate a coordinated effort, the VASC Director received assistance from the Visual Surveillance Coordinating Committee, whose regular members included the following:

9/
G-2 Senior Intel Advisor (VASC Director)
G-3 Air, III Marine Amphibious Force
G-3 Air, 1st and 3d Marine Divisions
G-2 Air, XXIV Corps Vietnam
G-2 Air, Americal, 1st and 101st Cavalry Divisions
G-2 Air, 1st ARVN Division Advisor (Northern VASC Coordinator)
G-2 Air, 2d ARVN Division Advisor (Southern VASC Coordinator)
G-2 Air, I Corps Advisor (Central VASC Coordinator)
CO, 21st and 220th Reconnaissance Aircraft Companies
CO, 16th Aviation Group
Ops Officer, 1st Marine Air Wing
ALO, Free World Forces, I Corps
ALO, ARVN, I Corps
ALO, 1st and 2d ARVN Divisions
ALO, Quang Nam Sector

The VASC system was unique to I Corps. Rather than assign O-1s directly to ARVN and Free World Forces users, the VASC Director retained authority to allocate resources in terms of designated numbers of flying hours each day to each I Corps user requesting and justifying such support. The only exception was the 2d Platoon, 21st RAC, at Chu Lai which was OPCON to the

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Americal Division on request of the division. It chose to forego a guaranteed number of flying hours for the opportunity of utilizing the O-1s more fully. This arrangement gave them perhaps an extra hour of flying time a day.

Whereas the Americal Division fragged its own O-1 platoon, the other five were fragged within the VASC system. Flexibility in shifting resources resulted. The system allowed allocation of flying hours for any particular user to vary with the need and the combat circumstances in the corps. To coordinate and reconcile the user requests, there was a Visual Aerial Surveillance Area Coordinator (VASAC) of captain's rank in each of the three ARVN areas in I Corps. Ideally, these coordinators should have been at ARVN division headquarters (where they were also the division air advisors), or at the Quang Nam Sector Headquarters, but being collocated with the O-1s provided closer control of fragging and more satisfactory VR debriefings. Therefore, the Northern and Central VASACs were at Phu Bai and Da Nang rather than at Hue Citadel and Hoi An. The Southern VASAC was at 2d ARVN Division Headquarters at Quang Ngai.

Actual allocation of O-1 support was done by the three coordinators, who received daily requests from ARVN and Free World Forces units without organic or assigned assets to fulfill their AO missions. The levied requirement for 74 hours daily flying time during the siege of Khe Sanh, requirements for other special projects such as PRAIRIE FIRE, and Operation THOR, were allocated first from available assets. More routine requests were justified on the following priorities:

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Support of ground and air operations;
FAC, artillery, and naval gunfire adjustment;
Convoy escort;
Visual Reconnaissance;
Liaison-type missions.

With qualified Marine and ARVN forward observers aboard, the Army O-1s flew in support of ground and air operations. In this way, Army "FAC" missions could occur and thus have precedence over VR missions. If much visual reconnaissance was accomplished, it was considered a VR mission. This was the reverse of Air Force policy, where any forward air controlling in a mission made it a FAC mission. An Army O-1 could also be pressed into service, if the Forward Observer aboard was qualified to perform naval gunfire adjustment. ^{10/}

Should the particular VASAC assets be inadequate to meet all requests from users, the aircraft were fragged for the next day to meet as many requests as possible in strict priority. Should any user formally request more support than he was allotted in the frag, the I Corps and XXIV Corps G-2s were the final arbiters. The procedure generally followed was to make justified reapportionments within the block of time devoted to Free World Forces, if an U.S. user wanted reconsideration or within the ARVN block of time, if it were an ARVN user who was dissatisfied. If that did not resolve the situation, then some assets originally allocated to the ARVN might be reapportioned to the Free World Forces, or vice versa if the ARVN deserved more support. Such reallocations were few and the Free World Forces-ARVN allocations of flying hours tended to remain stable on a weekly basis.

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Should a particular VASAC require more flying hours than his two platoons could provide, the corps assets could be shifted between the three areas. To take O-1s from the Northern VASAC required coordination at III MAF level. To request more assets be given the Northern VASAC required coordination through either 1st ARVN Division to I Corps to III MAF, or through XXIV Corps to III MAF, depending upon whether the pressing extra need was ARVN or U.S. The VASC Director could shift resources between the Central and Southern VASACs on his own authority. To gain Army O-1s from outside I Corps, it was necessary to go to COMUSMACV. This was done in early 1968 and brought the 21st RAC north into I Corps to service the greatly heightened level of engagements and the newly deployed three Army divisions.

Shifts could also be made within a user's own allocated number of daily missions. Thus, a Marine unit might not receive two VR missions in a particular area, but instead would get artillery adjustment missions. The Navy might lose its daily north or south coast flight, because naval gunfire adjustments, using Army O-1 assets, were fragged for the area and able to do VR.

Aside from allocating the Army O-1 assets in I Corps, the VASC system coordinated the total VR program in I Corps by collecting Army O-1 debriefing, and monitoring Air Force O-1/O-2 VR to insure total daily coverage of all I Corps. This system provided the close supervision necessary to fulfill the Corps Senior Advisor's responsibility of having adequate VR of all of I Corps. The VASC compiled daily and weekly summaries of total sorties and hours flown and those VR areas which were not covered by any American O-1s,

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O-2s and OV-10s.

The VASC compiled the Army O-1 debriefings, which at 1800 daily, it forwarded in a consolidated report to III MAF, I Field Force, and ten other recipients, along with 15 information recipients, including COMUSMACV and 7AF. In this way, a report of Army O-1 sightings were disseminated throughout I Corps and higher headquarters.

U.S. Marine VR

Unlike the Army divisions, the two Marine divisions in I Corps did not have assigned Air Force FACs and aircraft. Rather, the 3d Marine Division had seven O-1s (as of 30 June 1968) and the 1st Marine Division at Da Nang had approximately six OV-10s (only since July 1968). As a result, both divisions relied extensively on VR resources dedicated to other users. For instance, during December 1967, the Quang Tri Sector FACs flew 26 sorties (all types) for 54 hours and in January flew 41 sorties for 86 hours support. The Thua Thien Sector FACs flew an estimated 45 sorties in February 1968. Even the Americal FACs flew 31 sorties in March in support of the Marines.^{11/} Unfortunately, lack of standardized statistics precluded a compilation of the total number of Air Force sorties in support of the Marines. The quantity was significant, especially since the assets were dedicated to other users.

The lack of adequate Marine O-1s in Quang Tri hampered the VR program around Khe Sanh during early 1968. Khe Sanh was within the Marine AO, and therefore subject to the sector FAC policy of leaving U.S. division AOs to division VR programs. Also, the Quang Tri Sector had very limited assets.

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Until 21 January, the TIGER HOUND FACs operating in Laos were stationed at Khe Sanh. According to the October-December 1967 unit history, there were limitations in the VR program around Khe Sanh: ^{12/}

"A special VR program is being implemented with the Marines for their local TAOR. A program was in being previously but because of limited AF resources and personnel changes the program has been reduced to almost non-existence."

According to one FAC stationed at Khe Sanh, both the Marines and in-country FACs were neglecting the area within a thirty-mile radius of the base prior to the siege. ^{13/}

The ALO assigned to Khe Sanh recounted the situation concerning VR: ^{14/}

"Prior to the 21st of January, I arrived at Khe Sanh to support the Special Forces. I arrived there during the latter part of October. Looking at the situation, I found that there was no VR program set up for the Marines. I approached the Base Commander and offered him at least one flight per day in an O-1 aircraft with one of his air observers on board, and also offered to have my FACs (the TIGER HOUND Covey FACs) give him VRs prior to and after their missions for approximately 30 minutes for each O-2 flight, to be coordinated with the S2 of the 26th Marines. At this time I was told that this was not needed, and I was rejected."

"After the 21st of January, I was assigned as the ALO to Col Lowndes (the Base Commander) and we started setting up some sort of VR program. By that time, the Coveys had been pulled out of Khe Sanh and we had no way of getting intelligence except through our center at Da Nang and the S2 at Khe Sanh. Since our only means of communication was through HF single side band, this presented a problem because all intelligence had to be KAC'ed (i.e., coded) and very little intelligence was traded from the FAC VRs."

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Once the siege of Khe Sanh began, many of the FAC/VR resources of northern I Corps were put at the disposal of Khe Sanh. The TALLY HO WEST and its entry route allowed them to VR the southern DMZ several times a day. This familiarity with northern Quang Tri and the availability of sizable resources (15 O-2s on 30 June 1968) provided potential in-country resources. In January, the Tactical Air Control Center, 7AF, directed the TIGER HOUND and TALLY HO FACs to support Operation NIAGARA, the air effort against North Vietnamese regulars around Khe Sanh.^{15/} The in- and out-country FACs gave first priority to NIAGARA and, along with the Army O-1s also supporting the Marines, provided the increased FACs necessary to handle the surge of tac air and VR around Khe Sanh. This was an extraordinary effort for a major enemy challenge, but it was apparent, before and after the siege, that the 3d Marine Division required Air Force/Army support to accomplish some of the VR program within the division AO.

In Quang Nam, the 1st Marine Division also received Air Force/Army support. For instance, prior to receipt of approximately six OV-10s, the division received six daily Army O-1 sorties in its Task Force X-Ray area (that part of Thua Thien outside XXIV Corps). Upon receipt of the OV-10s, the support was cut to two sorties a day.^{16/} Similarly, the Quang Nam Sector FACs were able to reduce their daily support in Quang Nam during the same period from four to two sorties.^{17/}

Coverage

The resources available in I Corps at mid-1968 totaled 132 O-1s and O-2s:

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<u>SERVICE</u>	<u>UNIT</u>	<u>0-1</u>	<u>0-2</u>
USMC	3d Marine Div	7 <hr/> 7	
USA	21st Recce Acft Co	24	
	220th Recce Acft Co	38	
	1st Cav Div	7 <hr/> 69	
USAF	1st ARVN	2	6
	Quang Nam Sector		4
	2d ARVN Div	1	6
	1st Cav Div	1	9
	101st Abn Div	7	3
	Americal Div		9
	Special Forces	2	
	20th TASS		2
	I DASC		3
	DASC Victor		1
		<hr/> 13	<hr/> 43
TOTAL		89	43

Actual flyable aircraft numbered less, especially the 0-1s. Parts were difficult to obtain, since production of the 0-1 had been discontinued and CONUS inventories of 0-1 aircraft and parts were scarce. The 0-2 did not face this problem, but did encounter supply problems as the aircraft were relatively new to the Air Force inventory.

Among the 132 aircraft were seven 0-1s organic to the 1st Cavalry Division for primary use in artillery adjustment. Six Air Force 0-2s belonged to the 20th Tactical Air Support Squadron (TASS), I DASC, and DASC Victor. These flew administrative missions as well as FAC/VR sorties. Not included were the Marine/OV-10s that later deployed to I Corps, nor the Army OV-1C Mohawks of the 245th Surveillance Airplane Company. The latter ranged into

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North Vietnam and Laos and used such equipment as Side Looking Airborne Radar (SLAR).

Because of the lack of comparable statistics and the difference in primary missions, a determination could not be made as to which service accomplished the most VR in I Corps. The Army had two O-1 companies dedicated to reconnaissance, while the Air Force aircraft had control of airstrikes as their primary function. The Air Force O-2s, however, covered more territory per mission.

Much less uncertain was the question of who had primary responsibility to insure all of I Corps received VR coverage. The I Corps Senior Advisor, through the VASC, provided daily and weekly summaries to MACV, which listed unsurveyed VR areas and reasons for not surveying them. MACV Directive 381-1 levied on him the requirement for a "Weekly Visual Surveillance Report". In I Corps, the VASC received daily notification from the Army and Air Force O-1/O-2 personnel on which areas had or had not been covered.

Each province was divided into VR areas defined by MACV Directive 381-1 as "the area which one O-1 aircraft and crew can cover in a systematic search during a two hour mission". As the directive noted, such an area also depended upon terrain, vegetation, and sector boundaries. There were 34 VR areas in I Corps. To the largest extent possible, these had natural or province (sector) boundaries. For instance, Quang Ngai, a wedge-shaped area, was bounded on the west by several ancient walls and some rivers, on the north by the Ve River, and on the east by the South China Sea. Few areas,

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especially in the mountains, had such visible boundaries, but the FACs and Army pilots learned the ridge lines and drainages quickly enough to encounter little difficulty with locations (in good weather).

In Appendix I, the weekly reports are summarized from January to June 1968, listing areas not covered by VR in I Corps. ^{18/} Certain trends are readily apparent. Weather was responsible for more than one-half the VR areas not being covered, as the great proportion of weather cancellations occurred in early 1968, during the northeast monsoon which enshrouded the mountains in rain and fog. By June, an average of only one percent of the VR areas was not covered, and only one area for one day was not covered due to weather.

The Tet Offensive also significantly disrupted the VR program. The unprecedented fighting throughout the corps, the surge demands for FAC sorties, destruction of the 14 Air Force/Army aircraft in the Citadel, the general confusion, and disrupted communications all combined with bad weather to cause an average of one in four VR areas to go unsurveyed daily in February. The following statistics of VR areas not covered in all I Corps from 31 January to 8 February 1968 illustrate the situation: ^{19/}

Diverts	3
Lack of Pilot	3
Weather	19
Unknown	131
TOTAL	156

Areas without VR coverage 51 percent

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The 131 "unknowns" suggest the uncertainties of the first days of the Tet Offensive. For the first nine days, there was no daily VR coverage of one-half of I Corps. In some cases, the areas were flown on an every-other-day basis; in other cases the areas went unsurveyed.

As the agency monitoring VR efforts to insure complete coverage of I Corps, the VASC in effect assumed responsibility for coordinating the program. Operational control of two O-1 reconnaissance companies facilitated this effort. For instance, in Quang Nam Province the major U.S. user of VR was the 1st Marine Division, which received support from its own OV-10s, the Quang Nam Sector O-2s, and two Army O-1 platoons. The Air Force sorties were most frequently flown in the southeastern part of the province, around Hoi An, where the enemy was dug in. Therefore, the Central VASAC tended to schedule O-1s to the northern part of the province.

However, the scheduling was based on pragmatic considerations. The Assistant ALO for Quang Nam was unaware of any agreement to divide responsibility between the Air Force and Army, but the Central VASAC thought at least an informal agreement existed. ^{20/} In actuality, with the VASC system, areas receiving heavy Air Force sorties were not in need of Army O-1 sorties. Of course, the users had a great deal to say about which areas were to have VR.

Coordination between Air Force and Army VR resources was another instance where collocation of aircraft and crews made a difference. Only the Quang Ngai Army platoon was at the same field as the sector FACs. Chu Lai did beddown both the Air Force and Army aircraft supporting the Americal Division,

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and even closer coordination existed, because both were specifically dedicated to the division. But in Quang Nam and the 1st ARVN areas, the 0-1 platoon and sector FACs were not at the same fields, and the chance for close informal coordination was thereby greatly lessened.

Appendix III shows the daily frag for 29 July 1968 for Quang Nam. ^{21/} Both the Air Force and Army thoroughly covered this province's northeastern areas, while a north-central and southeastern area were flown mostly by the Air Force. Beyond these areas, the coverage was much less comprehensive. The Army flew two missions in support of the ARVN and two PRAIRIE FIRE missions crossed the area. Similarly, an Air Force TRAIL DUST mission (defoliation) in the western areas was able to do VR work. The sector ALO also had one general mission defined as "FAC/VR" to fly anywhere in the province as needed.

The pattern of coverage was representative of VR in I Corps. The coastal plains received extensive flying time as befitted their dense population, open vegetation, and extensive allied ground operations. The coastal VR areas, generally smaller than the mountain VR areas, received the preponderance of FAC/VR flying time, because the ground operations and artillery fire missions occurred in the lowland areas.

In the nearly unpopulated mountains, the potential sightings were fewer except on the trails and roads. The existence of major trails and roads "channelized" enemy movements, permitting concentrated surveillance in traveled areas. Indeed, intensive VR of much of the double and triple canopy jungle was unprofitable. The FACs in the jungle areas devoted their

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efforts to trails, roads, streams, open areas (potential farm land), and especially fords, where the enemy had to cross streams or obtain water. The 20th TASS orientation handout for FACs entitled "Airborne Visual Reconnaissance", stated "the jungle VR program demands a substantial portion of your energies" because "it is precisely in this area that the major infiltration occurs".^{22/}

In Quang Nam, nearly the total province population lived in the three coastal VR areas that received most of the 0-1/0-2 flying hours. The combined requirements of artillery adjustments, naval gunfire control, and FAC missions for the Marines and ARVN placed the preponderance of 0-1/0-2 activity, and hence VR activity, in the eastern part of the province. This was true of all I Corps.

Assessment

Clearly, I Corps was a mosaic of AOs receiving Visual Reconnaissance by several services without close coordination. Such multiple management and diverse implementation of the VR program had several implications and ramifications for the Air Force relative to an "Air Force VR Program."

Visual reconnaissance of the Air Force was performed within the command and control structure designed to control airstrikes. The tactical air support system could not place first emphasis on a VR program. Air Force VR was not applied to targeting in a regular, systematic fashion, and such observations were often not used at all, except as an adjunct to other information possessed by the ground commander.

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The DASCs were manned for day-to-day operation of the FAC/VR program but not staffed for in-depth analysis of VR tactics and effectiveness. Similarly, the 20th TASS, to whom all Air Force O-1s and O-2s were assigned in I Corps, did not generate studies, since it performed administrative functions for the aircraft and FACs in the field. It was not involved in day-to-day tactical operations, though the squadron did host monthly meetings of ALOs and FACs on standardization and tactics.

The distinction should also be made between data collected by the program and data collected about the program. The DASC and 20th TASS aircraft provided comprehensive and timely intelligence, but information about VR techniques and effectiveness was neither generated nor systematically collected. Even accurate statistics on flying hours devoted to VR were not available. The sector and division ALOs did submit a monthly activities report to the DASC and the 20th TASS, but neither organization systematically compiled the reports. Whether extensive reporting of the VR program was feasible or even useful is not the point here; rather, the point is to illustrate the absence of a specifically identifiable "VR Program". Primitive conditions at several forward operating sites made any extensive reporting system impractical and troublesome. The 20th TASS Maintenance Section collected the data concerning flying hours and sorties for O-1/O-2 aircraft, but did not provide a break down by FAC or VR missions. Data on VR sightings were collected from the Daily Intelligence Summaries (DISUMS) put out by the corps DASCs.

According to these DISUMs, the I Corps FACs flew 1,128 VR sorties during

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June and July 1968 (actually, from 29 May to 30 July). Those 1,128 sorties produced 306 sightings and 1,186 immediate tac air sorties. Thus, during the two months, the ratio was one sighting generated for every 3.7 VR sorties, but there was an average of one immediate tac air sortie per one VR sortie. The number of preplanned sorties generated by VR sightings was not obtainable.

The doubtful quality of these statistics becomes apparent when compared with similar DISUM data for the other three corps: ^{23/}

<u>Corps</u>	<u>VR Sorties</u>	<u>Sightings</u>	<u>Tac Air Immediate Sorties</u>
I	1,128	306	1,186
II	2,139	335	527
→ III	4,184	1,662	172
IV	1,523	21	112
	<u>8,974</u>	<u>2,324</u>	<u>1,997</u>

In III Corps, according to the DISUM data, the generation of one sighting occurred out of every 2.5 VR sorties, but an immediate tac air sortie occurred only out of every 24.3 VR sorties:

<u>Corps</u>	<u>VR Sorties to Produce One Sighting</u>	<u>VR Sorties to Produce One Immediate</u>
I	3.7	1.0
II	6.4	4.1
→ III	2.5	24.3
IV	72.5	13.6

Such a disparity between I and III Corps casts severe doubt on the uniform target value of sightings. The difference in the effective generation of sightings in III and IV Corps (2.5 versus 72.5 sorties for one sighting) was attributable in part to reporting guidelines. The IV Corps ARVN FACs did not

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report sightings where tac air was employed because action had been taken. Accordingly, the number of sightings fell far short of the number of immediates. The III Corps FACs, on the other hand, submitted very detailed lists of sightings. ^{24/} No valid comparison could be made between the two corps based on these VR statistics.

Collection of statistical data could provide valuable information for spotlighting the VR tactics most productive in generating targets, BDAs, and KBAs. (Studies on the VR program have been written, but they need updating.) The Operations Analysis Division, Seventh Air Force, published a thorough analysis in late 1966 in three parts:

"Some Notes on Visual Reconnaissance," 1 September 1966;

"An Evaluation of the Visual Reconnaissance Program in South Vietnam", 20 September 1966;

"Immediate Strike Support for Visual Reconnaissance", 22 October 1966".

Throughout the primary comprehensive report--that of 20 September--were comments on the need for continuing field analysis of the VR program. ^{25/} Two such statements were:

"It appears that the proper emphasis is not being placed on developing targets for air power in SVN. Questions are asked and detailed records kept on how many sorties were flown, how many tons of ordnance were delivered, how many structures were destroyed or damaged, how many KBA were realized, etc. The question not being properly emphasized is "How many lucrative targets were developed today?"

* * * * *

"Recommendation: Personnel responsible for

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scheduling VR sorties should employ available data and perform analyses of local VC movement patterns so that VR sorties can be scheduled during the expected times of movements."

Another comprehensive monograph was the RAND study entitled, "Airborne Visual Reconnaissance in South Vietnam" The field research lasted from December 1965 to March 1966, and the report was published in September 1966, under the authorship of four men. The report discussed several pertinent concepts:^{26/}

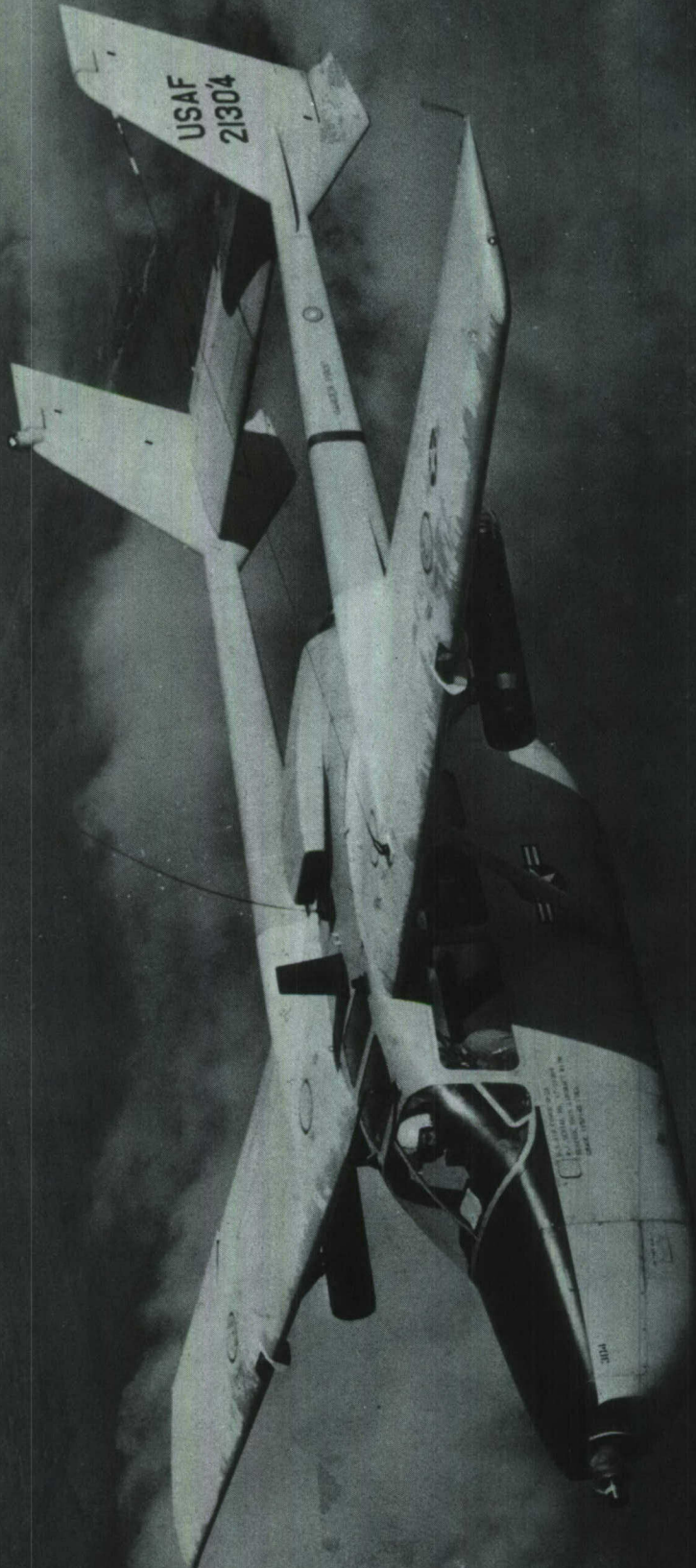
- Number of VR flying hours necessary to generate a significant sighting.
- Cataloging of types of sightings and the responsiveness of tac air.
- Optimum daylight and nighttime hours for scheduling VR missions.

Authoritative analysis of these questions, however, was based on data collected by the RAND team from large amounts of raw debriefings. One major conclusion of the four-month study concerned the existence of the VR program:^{27/}

"Except for a few outstanding cases, VR in South Vietnam has been a separate effort by each of the services involved, and within each service the VR effort has not been organized and directed to maximize its effectiveness. Maximum VR effectiveness requires a recognized 'VR Program'."

Thus, statistical analysis could evaluate the effectiveness of the VR program in terms of sightings per flying hours, type of targets located, most profitable hours for performing VR, and responsiveness to targets generated. By the end of August 1968, this type of evaluation was not being made.

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O-2 (Note Parallel Seating)
Figure 3

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ALOs and FACs did, of course, share their experiences on VR tactics. Occasional comments reached such publications as the Seventh Air Force Weekly Air Intelligence Summary, and the monthly Birddog of the 504th Tactical Air Support Group,^{28/} but they provided no systematic collection of material for detailed study. The Commander, 504th TASG, remarked in two successive issues of the Group's monthly Birddog newsletter that irreplaceable knowledge was being lost continually, due to FACs rotating out of Vietnam without recording their experiences.^{29/} He thought End of Tour reports were not sufficient; the experiences should be systematically recorded by the FACs throughout their tours and collected for future study.

Three representative areas for potential study were the evaluation of 0-1s and 0-2s as VR aircraft, the use of hand-held photography, and the value of night VR. Every FAC had his opinions on what a FAC aircraft should be and his opinions about the 0-1 and the 0-2. Those opinions varied. Whereas one FAC thought the noise level of the 0-2 provided the enemy with a decided warning, another FAC considered the situation of little consequence. Certain characteristics of the two aircraft were readily apparent. Tandem seating in the 0-1 made it the superior VR aircraft, just as the higher air speed and larger number of marking rockets made the 0-2 the better FAC aircraft. The parallel seating in the 0-2 decidedly limited the pilots view out the right side of his aircraft. The advantages of navigation equipment, two engines, and greater cruising range of the 0-2 were partly offset by the inability of the aircraft to get into short, rough airstrips where the 0-1 could. This limitation kept the 0-2 off several Army brigade airstrips.

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Minimum runway lengths authorized in I Corps were 1,500 feet for the 0-1 and 3,000 feet for the 0-2 at sea level and 2,100 and 3,600 feet, respectively, at 3,000 feet MSL.^{30/} Since the front engine of the 0-2 tended to throw rocks into the rear engine, the aircraft further required a smooth, improved airstrip surface. Yet, deploying the 0-2 away from several forward operating sites was partly compensated by the 0-2s longer cruising time. From April through June 1968, the 0-2s in I Corps averaged 2.6 hours per sortie and the 0-1s averaged 1.9 hours per sortie.^{31/} But since timely VR intelligence required close cooperation with the intelligence sections of the user units, the 0-2s not being able to reach some Army headquarters proved disadvantageous. The situation regarding the Air Force OV-10, which began combat tests in III Corps in August 1968, was uncertain, though the OV-10 could land on rougher fields than the 0-2.

Ironically, the necessity of basing the 0-2s at larger airstrips was an advantage in the hand-held camera program. The ALO at Quang Tri said of the disadvantages of working from a primitive forward operating site, "Hand-held photography has met with little success", because it could not be processed quickly enough at such an isolated site.^{32/} Units deployed at Da Nang and Chu Lai had nearby photographic processing facilities.

In September 1967, a hand-held Polaroid camera received field tests in I Corps. According to the 20th TASS quarterly history:^{33/}

"Intelligence information received a large boost during September with the evaluation of a hand-held Polaroid camera by the TASS. This test allowed rapid target information to be acquired

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by the sites, and useful information was obtained which is usually delayed when formal reconnaissance channels are used. It was particularly useful in obtaining pre-strike information for use with special missions for landing zone selection."

The process at one site, however, was not so successful. The Vietnamese heat destroyed the film and no refrigeration facilities were available.^{34/}

A third representative area of interest in VR technique concerned night flights. Night VR in I Corps was essentially nonexistent. Yet, across the Laotian Border in TIGER HOUND, night VR had an important role. The technique was described in a 7AF intelligence publication:^{35/}

"At night with one pilot flying and the other using the Starlight Scope (light-intensifying viewing device), VR is conducted by using dead reckoning navigation to a known starting point and circling until the man with the scope picks up the desired road. Visual recce is then conducted by flying along the left side of the road and circling when promising areas are spotted. The scope has proved especially effective in picking up dimmed vehicle lights which cannot be seen with the naked eye. Flares are not normally used for VR."

There was a certain reluctance to use night VR in I Corps, due to lack of experience with the technique.^{36/} Perhaps as the in-country interdiction program increased in scope (assuming adequate O-2 resources existed), night VR in I Corps would be employed more.

Summary

This report has detailed the Command and Control structure of the VR program in I Corps and illustrated certain conclusions:

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- In the MACV Visual Aerial Surveillance Program, responsibilities were delegated to Seventh Air Force and the Senior Corps Advisor, the two agencies controlling O-1/O-2 resources in I Corps. No single manager for scheduling existed, though the Senior Corps Advisor, through his VASC, was responsible for insuring complete VR coverage of the corps. He did not have operational control of the Air Force FAC resources dedicated to another mission but accomplished much of the VR program.
- A significant portion of the western mountains in I Corps went without systematic VR coverage in January and February due to seasonal bad weather. During the first nine days of the Tet Offensive, only one-half of I Corps received formal VR. By June, the good weather of the dry season and the relative lull in fighting allowed total coverage of I Corps.
- Collocation of FACs and the ground units they served provided closer coordination and enhanced the exchange of intelligence information.
- FACs of several Army and two ARVN sectors were not collocated with their user units because their aircraft could not deploy to the Army or sector headquarters.
- The Marine divisions had very inadequate organic FAC resources, necessitating sizable assistance from Air Force sector FACs and Army O-1s. Around Khe Sanh in December and January an inadequate VR program existed, in part, because the Marines did not have fixed-wing VR resources and turned down the resident ALO's offer to lend his TIGER HOUND FACs part-time each day. By July, the arrival of the Marine OV-10s began to solve the Marine FAC problem.
- Command Control of Air Force O-1/O-2 resources were split between the 20th TASS (Command) and the DASC (Control). The DASC compiled the daily intelligence summaries of Air Force VR sightings. However, the DASC was primarily concerned with direct air support and did not schedule VR missions nor provide close, continuing examination of the VR program.
- The number of VR sorties required to generate immediate tac air sorties varied from one in I Corps to 24.3 in III Corps. This large difference casts doubt on the standardization of the DISUM statistics and the usefulness of such statistics as a measure of the success of the VR program.

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- Major VR studies by RAND and Seventh Air Force date from 1966 and need updating. In I Corps no one analyzed the VR program in depth on such questions as most lucrative flight times, frequency of target types, and the value of night VR (which was nearly non-existent in I Corps).

One last point concerning the VR program in I Corps requires comment: should a "recognized VR Program" be instituted as suggested in the RAND study, and should it include resources from each of the separate services? Certainly, many potential areas existed for increasing the effectiveness of the VR program, especially in achieving closer coordination of mission schedules among the services. Presumably a "recognized VR program" would provide a medium for more specific data collection about the VR techniques, such as the most lucrative times for VR flights and the frequency of target types encountered.

Yet, as emphasized in this report, the I Corps VR program was user-oriented and the users required a Tactical Air Support System from the Air Force FACs. A "recognized VR program" without the Air Force resources would result in essentially what I Corps already had--two Army reconnaissance companies OPCON to a Visual Aerial Surveillance Center. For the Air Force, the realistic road to a more effective VR program lay in recognizing that the Air Force VR missions would continue to operate within the Tactical Air Support System.

Means should be found within that system to expand and systematize the exploitation and analysis of the data generated. As an example, the suggestion has been made that the computer printout capability of the MACV Combined Intelligence Center, Vietnam, be used to disseminate VR intelligence: ^{37/}

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"Plots and pinpoints should be made available at the TACP level as well as supporting the overall 7AF target effort. DASC Intelligence currently neither plots nor briefs VR, but does a good job of forwarding it up the line. Present manpower levels suggest that only at 7AF can these data be exploited beyond what the Sector TACP can accomplish."

Such a proposal might be one means of improving the VR program within the Tactical Air Support System.

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FOOTNOTES

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3. (C) Working papers, 20th TASS, Da Nang AB, 7 Aug 68.
4. (S) History of 20 TASS, 1 Apr-30 Jun 68, p. 46.
5. (S) Rpt, Quang Tri Sector ALO, "Monthly Activity Report for July 1968", 1 Aug 68.
6. (U) Paper, 20th TASS, "Airborne Visual Reconnaissance", undated, p. 7.
(U) Rpt, 20th TASS, Airborne Visual Reconnaissance, undated, Doc. 2.
7. (C) Working Paper, 20th TASS, Da Nang AB, 7 Aug 68.
8. (C) Working Paper, VASC, I Corps Hq, Da Nang AB, 8 Aug 68.
9. (C) Interview, Capt Donald Jones, Central VASAC, I Corps Hq, 8 Aug 68.
10. Ibid.
11. (S) Rpts, Quang Tri Sector ALO, "Monthly Activity Report", Dec-Jan 68; Thua Thien Sector ALO, Feb 68; Americal Division ALO, Mar 68.
12. (S) History, 20th TASS, 1 Oct-31 Dec 67, p. 59.
13. (C) Interview, Capt Joseph P. Johnson, TIGER HOUND FAC, Da Nang AB, 19 Feb 68, Doc. 3.
14. (C) Interview, Maj Milton G. Hartenbower, ALO, 26th Marine Regiment, Da Nang AB, 19 Feb 68, Doc. 4.
15. (S) Study, Project CHECO, PACAF Hq, "Operation NIAGARA, 22 Jan-31 Mar 68", 14 May 68.
16. (C) Interview, Capt Donald Jones, Central VASAC, I Corps Hq, 8 Aug 68.
17. (C) Interview, Lt Col Ulie Jeffers, ARVN ALO, I Corps, Da Nang AB, 17 Aug 68.
18. (S) "Weekly Visual Surveillance Report", CO, I Corps Adv Gp to COMUS-MACV, Jan-Jun 68.
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- (C) Interview, Capt Donald Jones, Central VASAC, I Corps Hq, 8 Aug 68.
21. (U) Working Papers, VASC, "VR Schedule", 29 Jul 68;
- (C) "Daily Schedule, Quang Nam Sector", I DASC, 29 Jul 68.
22. (U) Paper, 20th TASS, "Airborne Visual Reconnaissance", undated, p. 7;
- (U) Rpt, 20th TASS, Airborne Visual Reconnaissance, undated, Doc. 2.
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26. (S) Rpt, RAND Corp, J. I. Edelman, et. al., "Airborne Visual Reconnaissance in South Vietnam", Sep 66.
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- (SNF) Extract, WAIS, DIP, 7AF, 625, "FAC Tips", 1 Jun 68, Doc. 6.
29. (U) Newsletter, 504th TASG, Birddog, Vol 3, Nr 4, 1 May 68, p. 1, and Vol 3, Nr 3, 6 Apr 68, p. 2.
30. (U) Reg, 504th TASG, Nr 55-6, "Airfield Classification and Minimum Airfield Criteria", 11 Apr 68.
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32. (S) History, 20th TASS, 1 Apr-30 Jun 68, p. 51.
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(C) Interview, Col William Kuykendahl, FWF ALO, I Corps, Da Nang AB,
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APPENDIX I

Deployment of Air Force FAC Assets in I Corps

1. Dong Ha (USMC-3700 alum, 0-1/0-2)
Special Project THOR: 2 0-2s, 4 FACs (COVEY)
2. Mai Loc (SF-1500 laterite, 0-1)
3. Quang Tri La Vang (ARVN-1900 gravel, 0-1/0-2)
Quang Tri Sector: 2 0-1s, 2 FACs (TRAIL)
4. Quang Tri North (USMC-3700 alum, 0-1/0-2)
1st Cav Div (all acft): 1 0-1, 9 0-2s, 16 FACs (RASH)
5. LZ Betty (USA-no fixed-wing facility)
1st Bde/1st Cav Div: Bde TACP; acft at Quang Tri North
6. LZ Jane (USA-no fixed-wing facility) 2d Bde/1st Cav Div: Bde TACP;
acft at Da Nang
7. Camp Evans (USA-2900 gravel, 0-1)
1st Cav Div, 3d Bde/1st Cav Div, and 1/9th Cav: Div TACP (RASH
control) and two unit TACPs; acft at Quang Tri North
8. Hue Citadel (ARVN-2400 crushed rock, 0-1/0-2)
Thua Thien Sector and 1st ARVN Div: TACP (TRAIL control);
6 0-2s, 7 FACs (TRAIL)
9. Camp Eagle (USA-no fixed-wing facility)
101st Abn Div and 1st Bde/101st Abn Div: Div TACP (BILK Control)
and Bde TACP; acft at Hue-Phu Bai
10. Camp Rodriguez (USA-no fixed-wing facility)
3d Bde/82d Abn Div: Bde TACP (GIMPY Control); acft at Da Nang
11. LZ Sally (USA-1300 laterite, 0-1)
2d Bde/101st Abn Div: Bde TACP; 2 0-1s, 3 FACs (BILK)
12. Hue-Phu Bai (USMC-5600 hard, 0-1/0-2)
1st Bde/101st Abn Div: 5 0-1s, 7 FACs (BILK)
DASC V: 1 0-2, 3 FACs (SPEEDY)
13. Da Nang (USAF-10,000 Hard, 0-1/0-2)
Quang Nam Sector: 4 0-2s, 10 FACs (LOPEZ)
3d Bde/82d Abn Div: 3 0-2s, 5 FACs (GIMPY)
20th TASS: 2 0-2, 13 FACs (BULLET)
I DASC: 1 0-2, 5 FACs (BIG)
Special Project TALLY HO: 15 0-2s, 39 FACs, 5 Navs (COVEY)

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14. Marble Mt (USMC-4500 hard, 0-1/0-2)
5th Special Forces: 0-1, 1 FAC (BIG)
15. Ha Tan (also Thoung Duc) (SF-2600 clay, 0-1)
16. An Hoa (SF-3500 steel mat, 0-1)
17. Hoi An (ARVN-1600 pierced steel planking, 0-1)
Quang Nam Sector (Quang Da Special Zone): TACP
18. LZ Baldy (USA-2300 laterite, 0-1)
196th Bde/Am Div: Bde TACP; acft at Chu Lai
19. Tam Ky (ARVN-3900 hard, 0-1/0-2)
Quang Tin Sector: sector AL0; acft at Chu Lai, TACP (JAKE "Alpha" Control)
20. Chu Lai (USMC-8000 alum, 0-1/0-2)
Americal Div and 198th Bde/Am Div: Div TACP (HELIX Control) and Bde TACP; all Americal acft at Chu Lai: 9 0-2s, 17 FACs (HELIX)*
Quang Tin Sector FAC: 3 0-2s, 5 FACs (JAKE)
21. Tien Phouc (SF-2100 clay, 0-1)
22. Quang Ngai (ARVN-3400 hard, 0-1/0-2)
Quang Ngai Sector and 2d ARVN Div: TACP (JAKE Control);
1 0-1, 3 0-2s, 5 FACs (JAKE) 5th Special Forces; 1 0-1, 1 FAC (JAKE)
23. Tra Bong (SF-1200 dirt, 0-1)
24. Ha Thanh (SF-1400 dirt, 0-1)
25. Mang Buk (SF-2000 clay, 0-1)
26. Minh Long (SF-2100 clay, 0-1)
27. Ba To (SF-2400 dirt, 0-1)
28. Gia Vuc (SF-3200 sod, 0-1)
29. Duc Pho (USA-3800 alum, 0-1/0-2)
11th Bde/Am Div: TACP; acft at Chu Lai

* The 1/1st Armored Cav (-) at Hill 29 north of Tam Ky had no TACP. Its two assigned FACs were pooled with 196th Bde FACs and flew out of Chu Lai.

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APPENDIX II

VR Coverage in I Corps - January to June 1968
(Reasons Supporting Areas without VR Coverage)

	Div	LOA	L00	LOP	M	SD	Wx	Unk	Total	% Area Not VRed
Jan	3	6	23	3	1		83	21	105	10.0
Feb	3	24			10		105	113	253	25.7
Mar	4	2		17	2		70		107	10.2
Apr		17			1	12	5		35	3.3
May	2			1	6		1		10	1.0
Jun	12	49	23	21	14	18	308	134	579	9.5
Total										

Div - Divert

LOA - Lack of Aircraft

L00 - Lack of Observer

LOP - Lack of Pilot

M - Maintenance

SD - Standdown

Wx - Weather

Unk - Unknown

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APPENDIX III

0-1/0-2 Missions Flown in Quang Nam Province
(29 July 1968)

<u>Time</u>	<u>Acft Owner</u>	<u>Purpose</u>	<u>Areas Flown</u>
0600-0800	0-2 Air Force	TRAIL DUST	5 Locations
0630-0900	0-1* Army	Special Forces	PRAIRIE FIRE
0630-0900	0-1 Army	Marines	2 Locations
0700-0930	0-1* Army	ARVN	2 Locations
0700-0930	0-1 Army	Marines	NTAOR
0700-0930	0-1 Army	Navy	North Coast
0800-1100	0-2 Air Force	Marines	4 Locations
1000-1200	0-2 Air Force	FAC/VR	All areas
1000-1230	0-1* Army	ARVN	2 Locations
1000-1230	0-1 Army	Marines	2 Locations
1100-1400	0-2 Air Force	Marines	4 Locations
1230-1500	0-1 Army	Marines	2 Locations
1300-1500	0-2 Air Force	Naval Gun Fire	3 Locations
1330-1600	0-1 Army	Marines	NTAOR
1400-1630	0-1* Army	Special Forces	PRAIRIE FIRE
1400-1700	0-2 Air Force	Marines	4 Locations
1500-1730	0-1 Army	Marines	2 Locations
1700-1930	0-1 Army	Marines	NTAOR
1700-1930	0-1 Army	ARVN	1 Location
1700-1930	0-1 Army	ARVN	2 Locations
1700-1930	0-1 Army	Marines	2 Locations
1900-2200	0-2 Air Force	Rocket Patrol	3 Locations

* Two 0-1s flown as a team.

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GLOSSARY

ALO	Air Liaison Officer
AO	Area of Operation
ARVN	Army of Republic of Vietnam
BDA	Bomb Damage Assessment
COMUSMACV	Commander, U.S. Military Assistance Command, Vietnam
CONUS	Continental United States
DASC	Direct Air Support Center
DISUM	Daily Intelligence Summary
FAC	Forward Air Controller
KBA	Killed by Air
MACV	Military Assistance Command, Vietnam
MAF	Marine Amphibious Force
MIBARS	Military Intelligence Battalion Aerial Reconnaissance Support
NTAOR	Night Tactical Area of Operational Responsibility
OPCON	Operational Control
RAC	Reconnaissance Aircraft Company
SLAR	Side Looking Airborne Radar
TACC	Tactical Air Control Center
TACP	Tactical Air Control Party
TASS	Tactical Air Support Squadron
TS	TOP SECRET
VASAC	Visual Aerial Surveillance Area Coordinator
VASC	Visual Aerial Surveillance Center
VR	Visual Reconnaissance

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